

Identifying Barriers to Resident Robotic Console Time in a General Surgery Residency Through a Targeted Needs Assessment

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INTRODUCTION

- Robotic-assisted general surgery is experiencing exponential growth.
- Corewell Health East – William Beaumont University Hospital recently surpassed its 20,000th robotic case case, one of only 20 institutions to reach that milestone¹.
- Despite our institution's high volume, residents often graduate with inadequate console experience.
- Kern's 6-step model² was used to guide development and implementation of a targeted needs assessment to identify barriers to residents obtaining robotic console experience.



Photo Credit: Intuitive Surgical, Inc. (Sunnyvale, CA)

AIMS & HYPOTHESIS

- Aim: to investigate barriers to resident robotic console time from the perspective of both attending surgeons and surgery residents
- Hypothesis: residents' and attending surgeons' perceptions of barriers to robotic console time will differ

METHODS

- This study was approved by the Beaumont Health IRB (#2022-195)
- Two surveys were developed, one for attending surgeons and one for surgery residents. Surveys were anonymous, voluntary, and web-based.
- Questions were a variety of modalities and focused on demographics, robotic surgery experience, and perceived barriers to robotic console time for residents.
- Surveys were sent to 37 residents and 31 attending surgeons.
- Statistical analysis was performed using Qualtrics and SPSS.

RESULTS

Response rates: residents – n = 20 (54%); attending surgeons – n = 10 (31%)

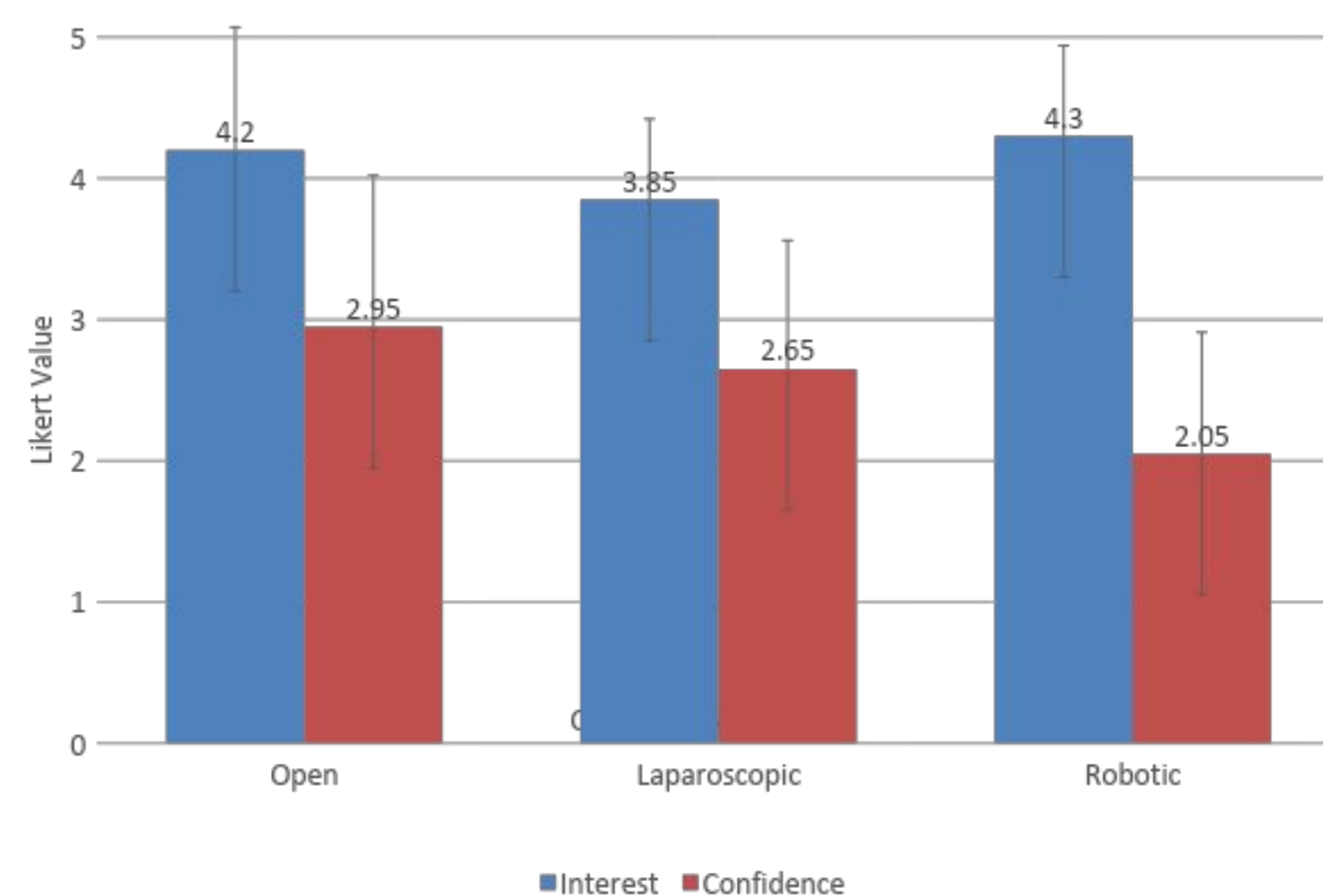


Figure 1: Resident interest and confidence in various operative modalities.

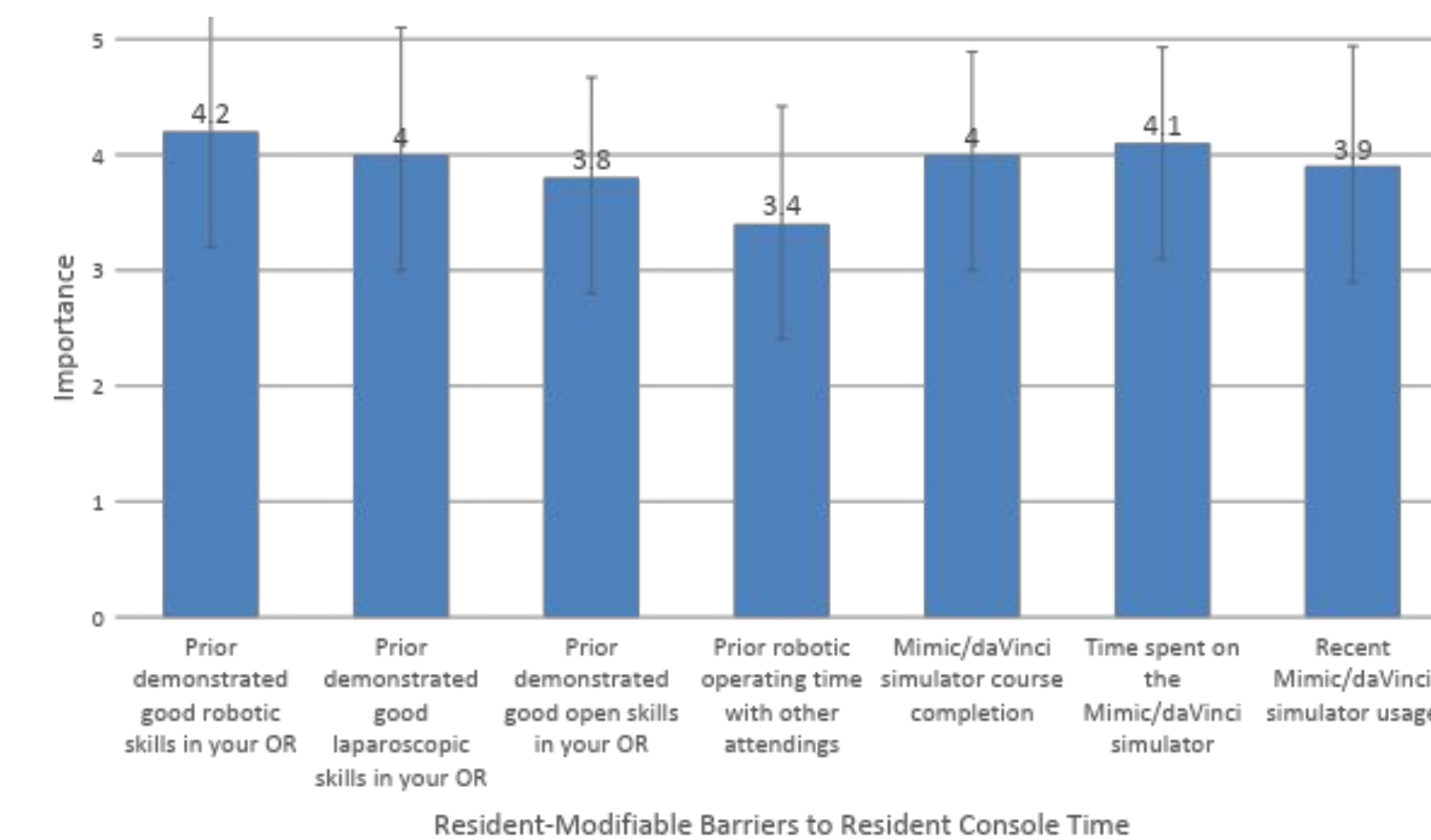


Figure 3: Importance of resident modifiable barriers to console time per attending surgeons

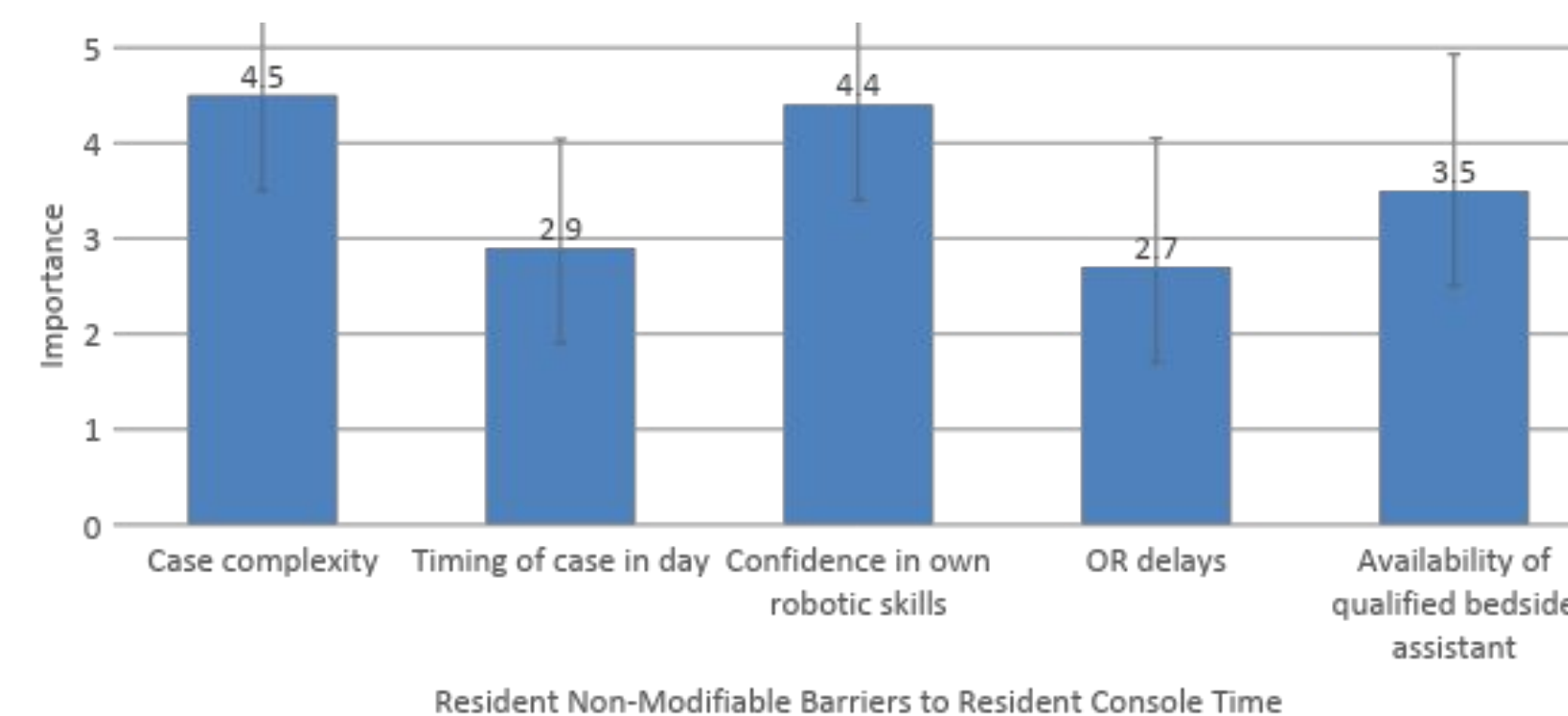


Figure 4: Importance of resident non-modifiable barriers to console time per attending surgeons

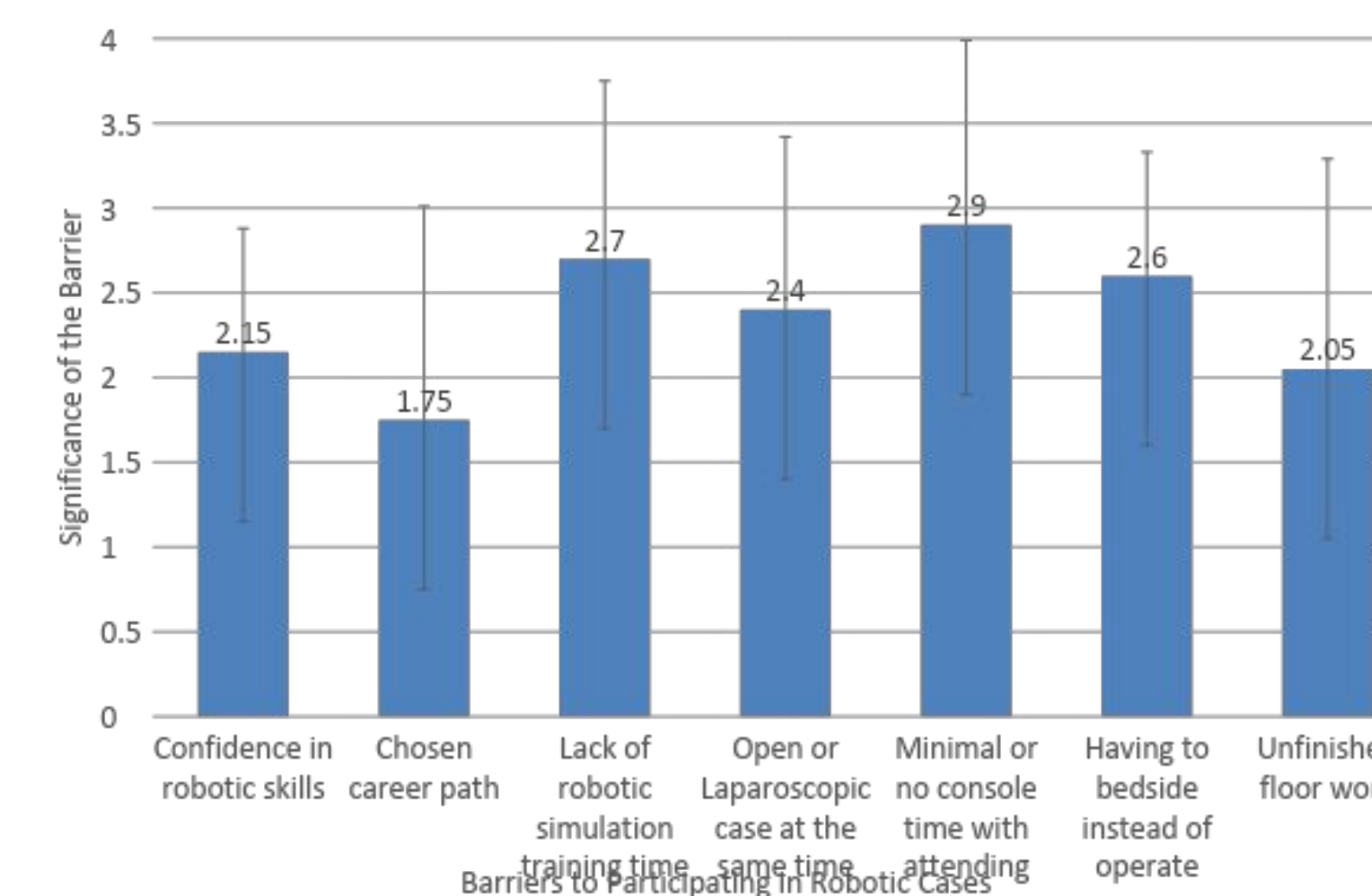
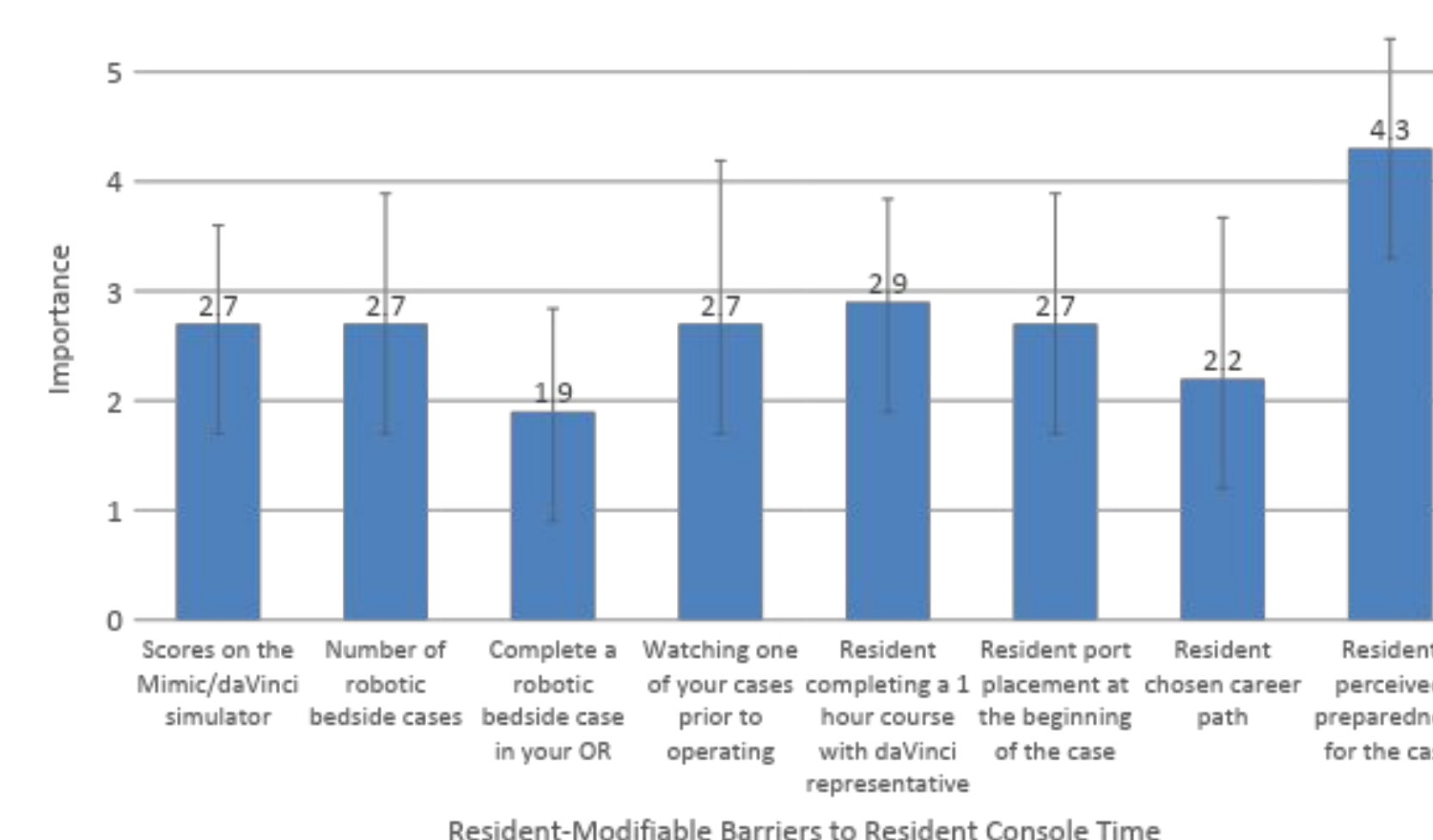


Figure 2: Resident perceived barriers to participating in robotic cases.



DISCUSSION

- Although resident interest in robotics is high, operative confidence in robotic surgery is low. This suggests that more formal opportunities are needed to increase residents' exposure to robotic surgery in order to improve proficiency and confidence in their robotic skills.
- One significant barrier to resident robotic console time reported by both residents and attendings is insufficient robotic simulation time. This major barrier to resident robotic console time could be addressed by adopting a working simulator and increasing residents' robotic simulation time.
- Another significant barrier to resident robotic console time is attendings' lack of confidence and case complexity. In addition to increasing robotic simulation time for residents, we recommend increasing robotic simulation time (especially for complex cases) for attending surgeons to increase confidence in their own robotic skills.

CONCLUSION

- Implementation of a high-fidelity robotic simulation-based curriculum could address significant barriers to resident console time.
- We predict that implementation of a robotic simulation-based curriculum will:
 - 1) boost residents' confidence in their own robotic-assisted skills
 - 2) increase attendings' confidence that residents are able to practice skills outside of the OR.
 - 3) increase attending confidence in their own robotic skills
- No universal simulation-based robotic curriculum currently exists, and thus creation of individual curricula falls to the institution^{3,4}.

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